

Amendments to the claims

This listing of claims will replace all prior versions, and listings, of claims to the application.

5 Listing of Claims:

1. (currently amended) A pulp carboxylation system comprising
a pulp bleaching stage,
a washer following said pulp bleaching stage,
10 a first mixer following said washer,
a supply of basic material connected to said system whereby said base material will be
mixed by said first mixer,
a second mixer following said first mixer,
a supply of carboxylation chemicals connected to said system after said first mixer
15 whereby said carboxylation chemicals will be mixed by said second mixer,
a first-stage-reaction chamber following said second mixer, said reaction chamber
being sized for a reaction time of no more than 15 minutes,
a third mixer following said reaction chamber,
a supply of stabilizing material connected to said system after said reaction chamber
20 whereby said stabilizing material will be mixed by said third mixer,
a second-stage-stabilizing chamber following said second-third mixer.
2. (canceled)
3. (original) The carboxylation system of claim 1 in which said reaction
chamber is sized for a reaction time of no more than 2 minutes.
- 25 4. (original) The carboxylation system of claim 1 in which said reaction
chamber is sized for a reaction time of no more than 1 minute.
5. (original) The carboxylation system of claim 1 in which said reaction
chamber is sized for a reaction time of no more than 30 seconds.
6. (original) The carboxylation system of claim 1 in which said reaction
30 chamber is sized for a reaction time of no more than 15 seconds.
7. (original) The carboxylation system of claim 1 in which said pulp
bleaching stage is an extraction stage.
8. (original) The carboxylation system of claim 7 in which said stabilizing
chamber is a chlorine dioxide bleach tower.

9. (original) The carboxylation system of claim 1 in which said pulp bleaching stage is a chlorine dioxide stage.

10. (original) The carboxylation system of claim 9 in which said stabilizing chamber is a chlorine dioxide tower.

5 11. (original) The carboxylation system of claim 1 in which said stabilizing chamber is a chlorine dioxide bleach tower.

12. (original) The carboxylation system of claim 1 in which said first mixer is a pump.

10 13. (original) The carboxylation system of claim 1 further comprising a pH meter at the exit of said reaction chamber.

14. (original) The carboxylation system of claim 1 in which said supply of basic material is selected from the group consisting of sodium hydroxide and sodium carbonate.

15 15. (original) The carboxylation system of claim 1 in which said supply of basic material is connected to said first mixer.

16. (original) The carboxylation system of claim 1 in which said supply of carboxylation chemicals is a sufficient amount of a primary oxidant selected from the group consisting of hindered heterocyclic oxammonium salts in which the carbon atoms adjacent the oxammonium nitrogen lack α -hydrogen substitution, the corresponding amines, 20 hydroxylamines, and nitroxides of these oxammonium salts, and mixtures thereof, and a secondary oxidant selected from chlorine dioxide and latent sources of chlorine dioxide in a sufficient amount to induce an increase in carboxyl substitution in the carbohydrate of at least 2 meq/100 g.

25 17. (original) The carboxylation system of claim 1 in which said supply of stabilization chemicals is connected to said second mixer.

18. (original) The carboxylation system of claim 1 in which said supply of stabilizing materials are selected from the group consisting of an alkali metal chlorite, a peroxide, an acid, chlorine dioxide, a peracid and mixtures thereof.

30 19. (original) The carboxylation system of claim 1 in which said supply of stabilizing materials is selected from the group consisting of a peroxide, an acid, and mixtures thereof.

20. (original) The carboxylation system of claim 1 in which said stabilizing material is an acid.

21. (original) The carboxylation system of claim 1 in which said supply of stabilizing materials is connected to said third mixer.